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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,180	03/14/2001	Hideo Furukawa	010216	2825

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EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 05/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/805,180

Applicant(s)

FURUKAWA ET AL.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 3,4 and 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the election filed on November 30, 2001. Applicants provisionally elected the species of ***Figures 7, claims 1-2, and 4-9, without traverse***. Neither Claim 4, which depends on the non-elected claim 3, nor claims 5/4, 6/4, 7/4, 8/4 ***are examined on the merit***.

Additionally, claims 7-9 do not read on the species of Figure 7; therefore, ***claims 7-9 are not examined on their merits***.

Specification

The disclosure is objected to because of the following informalities:

- On Page 14, line 14, "***fist***" should be replaced by -- ***first*** --.

Appropriate correction is required.

Claim Objections

Claims 1-2, 5/1, 6/2 are objected to because of the following informalities:

- In claim 1, lines 1-7, "***A diesel engine with a supercharger including a supercharger for taking in and pressurizing outside air and supplying the pressurized supercharged air into a cylinder, and heat exchanger, which is provided in a supercharged air passage from an outlet port of said supercharger to an inlet port of said cylinder and cools the supercharged air from said supercharger***" should be rewritten/rephrased/replaced by -- ***A supercharging diesel engine having a supercharger for pressurizing air ambient into a cylinder, and***

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heat exchanger being provided in a compressed air passage between said supercharger and said cylinder for cooling the compressed air from said supercharger--.

- In claims 2 and 5-8, line 1, *"The diesel engine with the supercharger"* should be replaced by --The supercharging diesel engine--.

- In claim 2, lines 3-4, "the phrase *"of engine with the supercharger using cooling water"* should be deleted, because the phrase renders the claim redundant; and line 8, *"said water cooling type of engine"* should be replaced by -- said water cooling type engine --.

- In claim 5, line 3, *"load of the engine"* after *"detecting"* should be replaced by -- an engine load --.

- In claim 6, line 7, *"said water cooling type of engine"* should be replaced by -- said water cooling type engine --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Mettig (Patent Number 3,976,041).

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Regarding claim 1, Mettig discloses a supercharging diesel engine having a supercharger (7) for pressurizing air ambient into a cylinder, and heat exchanger (4, 8) being provided in a compressed air passage between said supercharger and said cylinder for cooling the compressed air from said supercharger (See Figures 1-6);

wherein said heat exchanger (4, 8) is a hybrid type of heat exchanger comprising:

a first heat exchanger (4) for carrying out heat exchange between the supercharged air from the outlet port of said supercharger and a first heat exchange medium, and

a second heat exchanger (8) for carrying out heat exchange between the supercharged air from an outlet port of said first heat exchanger and a second heat exchange medium having higher temperature than said first heat exchange medium, and supplying the supercharged air after the heat exchange with said second heat exchange medium to said cylinder (See Figures 1-6, Columns 1-3, lines 1-67, and Column 4, lines 1-39).

Regarding claim 2, Mettig further discloses the supercharging diesel engine in accordance with claim 1,

wherein the engine is a water cooling type (1);

wherein said first heat exchange medium is outside air (4, air cooler) , and

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wherein said second heat exchange medium is cooling water (8, water cooler) from said water cooling type of engine (See Figures 1-6, Columns 1-3, lines 1-67, and Column 4, lines 1-39).

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mettig (Patent Number 4,075,991).

(See the entire document).

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Melchior (Patent Number 4,485,624).

(See Figure 2, and the entire document).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5/1 and 6/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Mettig (Patent Number 3,976,041), or Mettig (Patent Number 4,075,991), or Melchior (Patent Number 4,485,624), in view of Jean Ribeton (Patent number GB 2 055 963).

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Mettig/Mettig/Melchior teaches the invention as recited above; however, Mettig/Mettig/Melchior fails to disclose load detecting means and controller means.

Jean Ribeton teaches that it is conventional in the supercharging internal combustion engine art, to utilize load detecting means (34, 34', 34'') for detecting an engine load of the cooling type engine; and

control means (32, 38) for receiving a detection signal from said load detecting means and controlling flow of said second heat exchange medium/of cooling water from said water cooling type engine (See Figure, Page 1, lines 119129, Pages 2, lines 1-47).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the load detecting means and the controller means, as taught by Jean Ribeton, to improve the control of the supercharging air temperature, in the Mettig/Mettig/Melchior device.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Williams (US Patent Number 4,736,727) discloses a highway truck with charge air cooling.
- Emmerling (US Patent Number 4,317,439) discloses a cooling system.
- Cutler et al. (US Patent Number 4,062,188) disclose a turbocharger system for an internal combustion engine.

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- Hinkle et al. (US Patent Number 4,258,550) disclose an engine charging system with a dual function charge supplying and charge cooling blower.
- Woollenweber et al. (US Patent Number 4,918,923) disclose an internal combustion engine turbo-system and method.
- Hardy (US Patent Number 5,036,668) discloses an engine intake temperature control system.
- Prior (Patent Number 6,029,637) discloses an induction assembly for a supercharged internal combustion engine.
- Sprick (Patent Number 3,027,706) discloses a turbocharged V-type engine.
- Ghiani et al. (Patent Number 4,997,033) disclose a heat exchanger for cooling the cooling water and the charge air of internal combustion engine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Friday (7:30-5:00), first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9302 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

TTB
May 22, 2002



Thai-Ba Trieu
Patent Examiner
Art Unit 3748



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700